

## **ABSTRACT OF THE DISCLOSURE**

A method to support the non-blocking synchronization between threads of a multi-thread application. In one embodiment a thread switch flag (H-flag) is added to the system flags register. An instruction set allows the H-flag to be used to facilitate synchronization between application threads using resources local to the CPU. In one embodiment the instruction set may be used to generate a non-blocking object allocation algorithm. The algorithm allows the thread to complete an instruction sequence and subsequently validate the result. The present invention allows the sequence to execute and if an interruption occurs during execution, the sequence is abandoned midway and repeated. During the instruction sequence, the H-flag indicates an interruption. If the thread is interrupted, the instruction sequence is repeated. The sequence is designed to be idempotent, i.e., it can be abandoned mid-sequence and repeated without consequence.